H_2O Lab

STANDARD 3240-01 Students will observe and describe chemical and physical change.

OBJECTIVE
3240-0101 Differentiate between common chemical and physical changes.
3240-0102 Analyze factors that influence chemical and physical change.

INTENDED LEARNING OUTCOMES
1a. Make observations and measurements
2d. Collect and record data using procedures designed to minimize error.
2e. Analyze data and draw warranted inferences.

Materials
cup of water
pipette
foil
toothpick
detergent
coin
pinch of chalkdust

Safety concerns:


Teachers and students, be sure to keep all Chemical Safety Rules that are specified by your teacher and in all general laboratory experiences.

Procedure
Follow directions. Use this paper to answer questions. When finished, clean up according to teacher's instructions. Turn in completed paper. The student paper is also available as an Adobe Acrobat .pdf file.

Get Acrobat Reader

1. Place several drops of water on a piece of aluminum foil. Observe and describe in detail the physical appearance of the water.

2. Draw an aerial view (looking down on it) of a drop of water.

3. Draw a cross section (side view) of a drop of water.

4. Carefully place your finger just above a drop and OBSERVE what happens. Moving your finger slowly down toward the drop of water will help this work. Carefully describe your observations of what happened as you did this.

5. Place several more drops of water next to the ones already on the foil and OBSERVE what happens as the drops approach one another. Write down your observations.

6. Place a small drop of detergent onto one of your big drops and compare the shape of the water with another drop of similar size which has no detergent on it. Draw what you see. What could account for this?

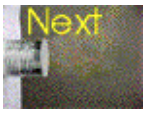
7. Carefully place a pinch of chalk dust in your cup of water. DON'T mix the chalk dust into the water. Put a small drop of detergent on the end of your toothpick and touch the toothpick to the center of the dust. Describe what happened.

8. Place a coin (dime or penny) on your table. Before doing anything else, estimate how many drops of water will stay on the coin before falling off the edge of it. Now, CAREFULLY add one drop of water at a time to the top of the coin and see how many drops will stay on the coin.

Estimation: _____

Actual: _____

9. Use the terms *adhesion* and *cohesion* to explain your results to step #8.



Print this page in Adobe Acrobat format.